CLAIMS

We Claim:

1. A compression fitting to connect a first aluminum conductor composite core reinforced cable and a second aluminum conductor composite core reinforced cable, each cable having a composite core surrounded by a conductor, comprising:
   a. a compressible body having at least one cavity to mate with the composite core from the first cable and the composite core from the second cable;
   b. a rigid enclosure, wherein the rigid enclosure encapsulates the compressible body to prevent the compressible body from expanding when compressed, and wherein the rigid enclosure has at least one opening to expose the at least one cavity to enable the compressible body to mate with the composite core; and
   c. at least one compression implement that fits into the at least one opening, wherein the compression implement compresses the compressible body, and wherein compressing the compressible body holds the composite core of the first cable and the second cable with frictional forces.
2. A compression fitting according to claim 1, wherein the compressible body is an elongated cylindrical body having a first end and a second end, wherein a first cavity creates and opening in the first end and axially extends along the length of and within the compressible body almost to a midpoint of the compressible body, and wherein a second cavity creates an opening in the second end and axially extends along the length of and within the compressible body almost to the midpoint of the compressible body.
3. A compression fitting according to claim 2, wherein the first cavity mates with the composite core of the first cable and the second cavity mates with the composite core of the second cable.

4. A compression fitting according to claim 1, wherein the compressible body is an elongated cylindrical body having a first end and a second end, wherein the cavity creates and opening in the first end and the second end and axially extends the entire length of along and within the compressible body.
5. A compression fitting according to claim 4, wherein the composite core of the first cable is inserted into the cavity at the first end and the composite core of the second cable is inserted into the cavity at the second end.
6. A compression fitting according to claim 1, wherein the compressible body is an elastomer.
7. A compression fitting according to claim 1, wherein the rigid enclosure is a tube with a first open end and a second open end that accepts the compressible body.
8. A compression fitting according to claim 7, wherein the first open end allows the composite core of the first cable to mate with the compressible body and the second open end allows the composite core of the second cable to mate with the compressible body.
9. A compression fitting according to claim 8, wherein a first compression implement fits over the composite core of the first cable and into the first opening of the rigid enclosure and a second compression implement fits over the composite core of the second cable and into the second opening of the rigid enclosure, and wherein at least one of the first compression implement or the second compression implement compresses the compressible body.
10. A compression fitting according to claim 4, wherein the rigid enclosure is a steel tube.
11. A compression fitting according to claim 1, wherein the at least one compression implement is a compression nut that threads into the at least one opening of the

rigid enclosure, and wherein tightening the compression nut compresses the compressible body.

12. A compression fitting according to claim 11, further comprising a washer placed between the compression nut and the compressible body in the at least one opening to prevent binding in the compressible body when the compression nut is turned.

13. A compression fitting according to claim 1, further comprising a conductor enclosure that slips over the rigid enclosure and connects the conductor of the first cable with the conductor of the second cable.

14. A compression fitting according to claim 13, wherein the conductor enclosure has a greater cross sectional area than the conductor to lower operating temperatures across the splice.

15. A compression fitting according to claim 1, wherein the composite core has one or more notches along the length of core mated with the compressible body, and wherein the compressible body expands into the notch when compressed.

16. A method to splice together a first aluminum conductor composite core reinforced cable and a second aluminum conductor composite core reinforced cable, each cable having a composite core surrounded by a conductor, comprising:

a. exposing a composite core of a first cable;

b. exposing a composite core of a second cable;

c. inserting the composite core of the first cable into a compressible body;

d. inserting the composite core of the second cable into the compressible body; and

e. compressing the compressible body to hold frictionally the composite core of the first cable and the second cable.

17. A method to splice according to claim 16, further comprising inserting the compressible body into a rigid enclosure.

18. A method to splice according to claim 17, wherein compressing the compressible body includes:

    a. threading a compression nut into the rigid enclosure; and

    b. tightening the compression nut to compress the compressible body.

19. A method to splice according to claim 18, wherein threading the compression nut includes placing a washer between the compressible body and the compression nut to prevent the compressible body from binding during tightening of the compression nut.

20. A method to splice according to claim 16, further comprising slipping a conductor sleeve over the splice to conduct electricity from the conductor of the first cable to the conductor of the second cable.

21. A method to splice according to claim 20, wherein the conductor sleeve is crimped to one of the first cable, the second cable, or both the first cable and the second cable to keep the conductor sleeve in place over the splice.

22. A method to splice according to claim 16, wherein a void is created between the conductor and the compressible body when the compressible body is compressed.

23. A method to splice according to claim 22, wherein the void is filled with a substance to prevent moisture penetration into the void.

24. A method to splice according to claim 16, wherein a compressive force of less than 10,000 psi is placed on the core.

25. A method to splice according to claim 16, wherein a compressive force of about 4,000 psi is placed on the core.

26. A method to splice according to claim 16, wherein the splice can maintain a tension in the cable of greater than 11,000 pounds.

27. A method to splice according to claim 16, wherein the splice can maintain a tension in the cable of about 33,000 pounds.

28. An electrical cable splice, comprising:

a. a first aluminum conductor composite core reinforced cable;

b. a second aluminum conductor composite core reinforced cable;

c. a splice, comprising:

i. a compressible body having at least one cavity to mate with the composite core from the first cable and the composite core from the second cable;

ii. a rigid enclosure, wherein the rigid enclosure envelops the compressible body to prevent the compressible body from expanding when compressed, and wherein the rigid enclosure has at least one opening to expose the at least one cavity to enable the compressible body to mate with the composite core; and

iii. at least one compression implement that fits into the at least one opening, wherein the compression implement compresses the compressible body, and wherein compressing the compressible body creates holds the composite core of the first cable and the second cable with frictional forces.

29. An electrical cable splice according to claim 28, wherein the compressible body is an elongated cylindrical body having a first end and a second end, wherein a first cavity creates and opening in the first end and axially extends along the length of and within the compressible body almost to a midpoint of the compressible body, and wherein a second cavity creates an opening in the second end and axially

extends along the length of and within the compressible body almost to the midpoint of the compressible body.

30. An electrical cable splice according to claim 29, wherein the first cavity mates with the composite core of the first cable and the second cavity mates with the composite core of the second cable.

31. An electrical cable splice according to claim 28, wherein the compressible body is an elongated cylindrical body having a first end and a second end, wherein the cavity creates and opening in the first end and the second end and axially extends the entire length of along and within the compressible body.

32. An electrical cable splice according to claim 31, wherein the composite core of the first cable is inserted into the cavity at the first end and the composite core of the second cable is inserted into the cavity at the second end.

33. An electrical cable splice according to claim 28, wherein the compressible body is an elastomer.

34. An electrical cable splice according to claim 28, wherein the rigid enclosure is a tube with a first open end and a second open end that accepts the compressible body.

35. An electrical cable splice according to claim 34, wherein the first open end allows the composite core of the first cable to mate with the compressible body and the second open end allows the composite core of the second cable to mate with the compressible body.

36. An electrical cable splice according to claim 35, wherein a first compression implement fits over the composite core of the first cable and into the first opening of the rigid enclosure and a second compression implement fits over the composite core of the second cable and into the second opening of the rigid

enclosure, and wherein at least one of the first compression implement or the second compression implement compresses the compressible body.

37. An electrical cable splice according to claim 28, wherein the rigid enclosure is a steel tube.

38. An electrical cable splice according to claim 28, wherein the at least one compression implement is a compression nut that threads into the at least one opening of the rigid enclosure, and wherein tightening the compression nut compresses the compressible body.

39. An electrical cable splice according to claim 38, further comprising a washer placed between the compression nut and the compressible body in the at least one opening to prevent binding in the compressible body when the compression nut is turned.

40. An electrical cable splice according to claim 28, further comprising a conductor sleeve that encapsulates the rigid enclosure and connects the conductor of the first cable with the conductor of the second cable.

41. An electrical cable splice according to claim 40, wherein the conductor sleeve has a greater cross sectional area than the conductor to lower operating temperatures across the splice.

42. An electrical cable splice according to claim 28, wherein the composite core has one or more notches along the length of core mated with the compressible body, and wherein the compressible body expands into the notch when compressed.

43. A mechanical fitting to connect a first aluminum conductor composite core reinforced cable and a second aluminum conductor composite core reinforced cable, each cable having a composite core surrounded by a conductor, comprising:

a. at least one compressing body having at least one cavity to mate with the composite core from the cable, wherein the at least one compressing body is fixed to the composite core; and

b. a rigid enclosure, wherein the rigid enclosure encapsulates the at least one compressing body; wherein tension on the cable causes the at least one compressing body to compress the composite core.

44. A mechanical fitting according to claim 43, wherein the at least one compressing body is formed from at least two section, and wherein the at least two section close together to compress the composite core.

45. A mechanical fitting according to claim 44, wherein the at least two sections have an indention on an inner surface along a longitudinal axis, the indention on the at least two sections form a lumen inside the at least one compressing body when the at least two sections are brought together, and wherein the lumen accepts the composite core.

46. A mechanical fitting according to claim 44, wherein the at least two sections, when brought together, form a compressing body that is conic shaped.

47. A compression fitting dead end to terminate an aluminum conductor composite core reinforced cable, the cable having a composite core surrounded by a conductor, comprising:

a. a compressible body having a cavity to mate with the composite core from the cable;

b. a rigid enclosure, wherein the rigid enclosure encapsulates the compressible body to prevent the compressible body from expanding when compressed, and wherein the rigid enclosure has at least one opening to expose the at least one cavity to enable the compressible body to mate with the composite core;

c. a connector, wherein the connector attaches to the rigid enclosure at the at least one opening and connects to a structure that holds the dead end; and

d. a compression implement that fits into the at least one opening, wherein the compression implement compresses the compressible body, and wherein compressing the compressible body holds the composite core of the cable with frictional forces.

48. A compression fitting dead end according to claim 47, wherein the compressible body is an elongated cylindrical body having a first end, wherein a first cavity creates and opening in the first end and axially extends along the length of and within the compressible body almost to an endpoint of the compressible body.

49. A compression fitting dead end according to claim 48, wherein the first cavity mates with the composite core of the cable.

50. A compression fitting dead end according to claim 47, wherein the compressible body is an elongated cylindrical body having a first end, wherein the cavity creates and opening in the first end and axially extends along the entire length of and within the compressible body.

51. A compression fitting dead end according to claim 50, wherein the composite core of the cable is inserted into the cavity at the first end.

52. A compression fitting dead end according to claim 47, wherein the compressible body is an elastomer.

53. A compression fitting dead end according to claim 47, wherein the rigid enclosure is a tube with a first open end and a second open end that accepts the compressible body.

54. A compression fitting dead end according to claim 53, wherein the first open end allows the composite core of the first cable to mate with the compressible body and the second open end attaches to the connector.

55. A compression fitting dead end according to claim 54, wherein the compression implement fits over the composite core of the cable and into the first opening of the rigid enclosure, and wherein the compression implement compresses the compressible body.

56. A compression fitting dead end according to claim 47, wherein the rigid enclosure is a steel tube.

57. A compression fitting dead end according to claim 47, wherein the compression implement is a compression nut that threads into the at least one opening of the rigid enclosure, and wherein tightening the compression nut compresses the compressible body.

58. A compression fitting dead end according to claim 57, further comprising a washer placed between the compression nut and the compressible body in the at least one opening to prevent binding in the compressible body when the compression nut is turned.

59. A compression fitting dead end according to claim 47, further comprising a conductor sleeve that slips over the rigid enclosure and connects the conductor of the cable with an end user.

60. A compression fitting dead end according to claim 59, wherein the conductor sleeve has a greater cross sectional area than the conductor to lower operating temperatures across the dead end.

61. A compression fitting dead end according to claim 59, further comprising a jumper terminal that attaches to the conductor sleeve, wherein the jumper terminal connects the conductor sleeve to the end user.

62. A compression fitting dead end according to claim 47, wherein the composite core has one or more notches along the length of composite core mated with the compressible body, and wherein the compressible body expands into the notch when compressed.

63. A method to terminate an aluminum conductor composite core reinforced cable, the cable having a composite core surrounded by a conductor, comprising:

a. exposing a composite core of the cable;

b. inserting the composite core of the cable into a compressible body;

c. compressing the compressible body to hold frictionally the composite core of the cable;

d. coupling a connector to the compressible body; and

e. attaching the connector to a structure to physically terminate the dead end.

64. A method to terminate according to claim 63, further comprising inserting the compressible body into a rigid enclosure.

65. A method to terminate according to claim 64, wherein compressing the compressible body includes:

a. threading a compression nut into the rigid enclosure; and

b. tightening the compression nut to compress the compressible body.

66. A method to terminate according to claim 63, wherein threading the compression nut includes placing a washer between the compressible body and the compression nut to prevent the compressible body from binding during tightening of the compression nut.

67. A method to terminate according to claim 63, further comprising slipping a conductor sleeve over the dead end to conduct electricity from the conductor of the cable to an end user.

68. A method to terminate according to claim 67, wherein a jumper terminal is attached to the conductor sleeve to conduct the electricity from the conductor sleeve to the end user.

69. A method to terminate according to claim 63, wherein a void is created between the conductor on the cable and the compressible body when the compressible body is compressed.

70. A method to terminate according to claim 69, wherein the void is filled with a substance to prevent moisture penetration into the void.

71. A method to terminate according to claim 63, wherein a compressive force of less than 10,000 psi is placed on the core.

72. A method to terminate according to claim 63, wherein a compressive force of about 4,000 psi is placed on the core.

73. A method to terminate according to claim 63, wherein the splice can maintain a tension in the cable of greater than 11,000 pounds.

74. A method to terminate according to claim 63, wherein the splice can maintain a tension in the cable of about 33,000 pounds.

75. A cable terminal, comprising:

a. an aluminum conductor composite core reinforced cable;

b. a compression fitting dead end, comprising:

i. a compressible body having a cavity to mate with a composite core from the cable;

ii. a rigid enclosure, wherein the rigid enclosure encapsulates the compressible body to prevent the compressible body from expanding when compressed, and wherein the rigid enclosure has at least one opening to expose the cavity to enable the compressible body to mate with the composite core;

iii. a connector, wherein the connector attaches to the rigid enclosure at the at least one opening and connects to a structure that holds the dead end; and

iv. a compression implement that fits into the at least one opening, wherein the compression implement compresses the compressible body, and wherein compressing the compressible body holds the composite core of the cable with frictional forces.

76. A cable terminal according to claim 75, wherein the compressible body is an elongated cylindrical body having a first end, wherein a first cavity creates and opening in the first end and axially extends along the length of and within the compressible body almost to an endpoint of the compressible body.

77. A cable terminal according to claim 76, wherein the first cavity mates with the composite core of the cable.

78. A cable terminal according to claim 75, wherein the compressible body is an elongated cylindrical body having a first end, wherein the cavity creates and opening in the first end and axially extends along the entire length of and within the compressible body.

79. A cable terminal according to claim 78, wherein the composite core of the cable is inserted into the cavity at the first end.

80. A cable terminal according to claim 75, wherein the compressible body is an elastomer.

81. A cable terminal according to claim 75, wherein the rigid enclosure is a tube with a first open end and a second open end that accepts the compressible body.

82. A cable terminal according to claim 81, wherein the first open end allows the composite core of the cable to mate with the compressible body and the second open end attaches to the connector.

83. A cable terminal according to claim 82, wherein the compression implement fits over the composite core of the cable and into the first opening of the rigid enclosure, and wherein the compression implement compresses the compressible body.

84. A cable terminal according to claim 75, wherein the rigid enclosure is a steel tube.

85. A cable terminal according to claim 75, wherein the compression implement is a compression nut that threads into the at least one opening of the rigid enclosure, and wherein tightening the compression nut compresses the compressible body.

86. A cable terminal according to claim 85, further comprising a washer placed between the compression nut and the compressible body in the at least one opening to prevent binding in the compressible body when the compression nut is turned.

87. A cable terminal according to claim 75, further comprising a conductor sleeve that slips over the rigid enclosure and connects the conductor of the cable with an end user.

88. A cable terminal according to claim 87, wherein the conductor sleeve has a greater cross sectional area than the conductor to lower operating temperatures across the dead end.

89. A cable terminal according to claim 87, further comprising a jumper terminal that attaches to the conductor sleeve, wherein the jumper terminal connects the conductor sleeve to the end user.

90. A cable terminal according to claim 75, wherein the composite core has one or more notches along the length of composite core mated with the compressible body, and wherein the compressible body expands into the notch when compressed.